

- Az
- 4) an equivalent-sphere diameter of 0.05 to 1  $\mu\text{m}$ ,
  - 5) the non-photosensitive organic silver salt grain has a silver arachidate content of 6 mol% or less per mol of the non-photosensitive organic silver salt, and
  - 6) the non-photosensitive organic silver salt grain has a silver behenate content of 90 to 100 mol% per mol of the non-photosensitive organic silver salt.--

---

REMARKS

Status of the Claims

Claims 1-13 are pending in the present application. The basis for claim 12 includes the description on page 8 of the specification. The basis for claim 13 includes claims 1-3.

Rejection of Claims 1-11 Under 35 U.S.C. 112

Claims 1-11 are rejected by the Examiner under 35 U.S.C. 112, second paragraph, for the reasons set forth in paragraph 2 of the Office Action. This rejection is respectfully traversed. Reconsideration and withdrawal thereof are requested.

The Examiner's position is that "the claiming of 'mole %' in claims 1-5 in the absence of providing basis of the mole percentage renders the claimed indefinite." Accordingly, claims 1-5 have been amended to clarify the present invention. For instance, claim 1 has been amended to read "1) a silver stearate content of 1 mol% or less per mol of the non-photosensitive

organic silver salt." Similar amendments have been introduced into claims 2-5. Thus, this rejection should be withdrawn in view of the clarifying amendments to claims 1-5 (e.g. basis for mole percentage).

#### Prior Art Rejections

Claims 1-11 are rejected by the Examiner under 35 U.S.C. 102(b)/103(a) over EP1004930 for the reasons set forth in paragraph 5 of the Office Action. Claims 1-11 are rejected by the Examiner under 35 U.S.C. 102(b)/103(a) over EP0962812 for the reasons set forth in paragraph 6 of the Office Action. These rejections are respectfully traversed. Reconsideration and withdrawal thereof are requested.

#### The Present Invention

A first embodiment of the present invention as recited in claim 1 relates to a heat-developable image recording material comprising:

- a support;
- a photosensitive silver halide;
- a reducing agent for a silver ion;
- a binder; and
- a non-photosensitive organic silver salt grain,

wherein the non-photosensitive organic silver salt grain has:

- 1) a silver stearate content of 1 mol% or less per mol of the non-photosensitive organic silver salt;
- 2) a length/width ratio of 1 to 9;
- 3) an aspect ratio of 1.1 to 30; and
- 4) an equivalent-sphere diameter of 0.05 to 1  $\mu\text{m}$ .

A second embodiment of the present invention as recited in claim 13 relates to a heat-developable image recording material comprising:

a support;  
a photosensitive silver halide;  
a reducing agent for a silver ion;  
a binder; and  
a non-photosensitive organic silver salt grain,  
wherein the non-photosensitive organic silver salt grain has:

- 1) a silver stearate content of 1 mol% or less per mol of the non-photosensitive organic silver salt;
- 2) a length/width ratio of 1 to 9;
- 3) an aspect ratio of 1.1 to 30;
- 4) an equivalent-sphere diameter of 0.05 to 1  $\mu\text{m}$ ,

- 5) the non-photosensitive organic silver salt grain has a silver arachidate content of 6 mol% or less per mol of the non-photosensitive organic silver salt, and
- 6) the non-photosensitive organic silver salt grain has a silver behenate content of 90 to 100 mol% per mol of the non-photosensitive organic silver salt.

EP1004930

By picking and choosing from the teachings of EP1004930, this reference discloses a thermally developable photosensitive material (see title) comprising

- (i) Support - see paragraphs [0109]-[0113],
- (ii) Photosensitive silver halide - see abstract,
- (iii) Reducing Agent - see abstract,
- (iv) Binder - see abstract,
- (v) Non-photosensitive organic silver salt grain having:

- (a) silver stearate - see paragraph [0053]; [Applicants' representative did not find the claimed mol% to be disclosed,]
- (b) length/width ratio of 1-9 - Examiner refers to pages 3-4 of EP1004930 (needle ratio of 1.1-10 - see abstract),

- (c) aspect ratio of 1.1-30 - see abstract which discloses aspect ratio of at least 3 and
- (d) equivalent-sphere diameter of 0.05-1 $\mu$ m - [Applicants' representative did not find this limitation to be disclosed.]

EP0962812

By picking and choosing from the teachings of EP0962812, this reference discloses a thermally developable photosensitive material (see paragraph [0001]) comprising

- (i) Support - see paragraphs [0134], [0203]; and Example 1,
- (ii) Photosensitive silver halide - see paragraphs [0095] and [0134]
- (iii) Reducing Agent - see paragraphs [0127] and [0134],
- (iv) Binder - see paragraph [0134],
- (v) Non-photosensitive organic silver salt grain having:
  - (a) silver stearate - the Examiner cites paragraph [0035] [Applicants' representative did not observe silver stearate or mol % to be disclosed anywhere in the reference ]
  - (b) length/width ratio of 1-9 - the Examiner appears to refer to the abstract when reciting 1-4,
  - (c) aspect ratio of 1.1-30 - see abstract for 2-30 and

(d) equivalent-sphere diameter of 0.05-1 $\mu$ m - see abstract for 0.1-0.8 $\mu$ m.

Distinctions Between the Present Invention and the Cited Prior Art

Claims 1 and 13 recite that the silver stearate content is 1 mole% or less. This limitation is nowhere disclosed or suggested in either of the references relied upon by the Examiner. Moreover, there is no specific embodiment of the claimed invention taught in the prior art, nor is there a suggestion for modifying the prior art in order to obtain the present invention. Thus, the prior art rejections should be withdrawn.

A characteristic feature of the present invention as recited in, for instance, claim 13, is that when silver behenate is used as an organic silver salt, the content of silver stearate and silver arachidate contained as impurities is 1 mole % or less and 6 mole % or less, respectively. The definition of "a silver stearate content of 1 mole% or less" in claims 1 and 13 clearly distinguishes the present invention from the cited prior art.

The purity of silver behenate is preferably high in claim 13 and of course includes 100%. However, the prior art does not encompass the claimed purity of silver behenate. In this regard, the Examiner should note that behenic acid is produced from

fatty acids derived from plants. Thus, it naturally contains fatty acids as impurities which differ in carbon number (e.g. stearic acid and arachidic acid), especially if the behenic acid undergoes no particular purification. For example, the Examiner's attention is directed to the attached Internet Catalog of the Thornley Company attached hereto, which shows the purities of materials called "behenic acid" to be 70% and 90%.

In addition, the attached tables support the patentability of the various claims of the present invention. For instance, neither of references disclose or suggest 1 mole % or less of stearic acid, thus resulting in patentability of the present invention.

Accordingly, the prior art rejections should be withdrawn in view of the remarks hereinabove.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a two month extension of time for filing a reply in connection with the present application, and the required fee of \$410.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 

Marc S. Weiner, #32,181

P.O. Box 747  
Falls Church, VA 22040-0747  
(703) 205-8000

MSW/sh  
0649-0814P



**MARKED UP VERSION OF THE CLAIMS**

The claims have been amended as follows:

1. A heat-developable image recording material comprising:  
a support;  
a photosensitive silver halide;  
a reducing agent for a silver ion;  
a binder; and  
a non-photosensitive organic silver salt grain,  
wherein the non-photosensitive organic silver salt grain  
has:

- 1) a silver stearate content of 1 mol% or less per mol of the non-photosensitive organic silver salt;
- 2) a length/width ratio of 1 to 9;
- 3) an aspect ratio of 1.1 to 30; and
- 4) an equivalent-sphere diameter of 0.05 to 1  $\mu\text{m}$ .

2. The heat-developable image recording material as claimed in claim 1, wherein the non-photosensitive organic silver salt grain has a silver arachidate content of 6 mol% or less per mol of the non-photosensitive organic silver salt.

3. The heat-developable image recording material as claimed in claim 1, wherein the non-photosensitive organic silver salt grain has a silver behenate content of 90 to 100 mol% per mol of the non-photosensitive organic silver salt.

4. The heat-developable image recording material as claimed in claim 1, wherein the non-photosensitive organic silver salt grain has a silver behenate content of 95 to 100 mol% per mol of the non-photosensitive organic silver salt.

5. The heat-developable image recording material as claimed in claim 1, wherein the non-photosensitive organic silver salt grain has a silver behenate content of 97 to 100 mol% per mol of the non-photosensitive organic silver salt.

Claims 12 and 13 have been added.

## Claims

	Aspect Ratio	Length/width Ratio	Size	Thickness	Stearic Acid	Arachidic Acid
Present Invention	1.1-30	1-9	0.01-1		1 mole% or less	6 mole% or less
EP 962812 A1	2-30	1-4	0.1-0.8	0.01-0.2		
EP 1004930 A2	3< 5< 3-10	1.1-10 1.1-5				

## Example

Example	Aspect Ratio	Length/width Ratio	Size	Thickness	Stearic Acid	Arachidic Acid	Behenic Acid
Present Invention	10-27	1.1-8	0.4-0.55		0-0.5	2-8	91.5-98
EP 962812 A1	4.3-5.2	1.5-2.2	0.52-0.68	0.14-0.18	0.1926(24%)	0.2661(34%)	0.3267(42%) A
EP 1004930 A2	3< 3<	1.5-11.5 1.5-11.5			0.022(3%)	0.09(12%)	0.638(85%) B

\* : Composition of Edenor C22-85R

3

Welcome to



THORNLEY  
COMPANY

A quality distributor and representative for specialty chemical  
manufacturers in the Mid-Atlantic Region



4

[<< back](#)

## Nonionics

<u>Alkanolamides for Personal Care Products</u>	<u>Amine Oxides</u>	<u>Ethoxylated Amides</u>
<u>2:1 Alkanolamides</u>	<u>Alkanolamides for Industrial Products</u>	<u>Ethoxylated Alcohol</u>
<u>Ethoxylated Alkylphenols</u>	<u>Fatty Acids</u>	<u>Ethoxylated Fatty Acids</u>
<u>Glycerine &amp; Derivatives</u>	<u>Glycol Esters</u>	<u>PEG Esters</u>
<u>Polyethylene Glycols</u>	<u>Sorbitan Esters</u>	<u>Specialty Esters</u>
<u>Ethoxylated Fatty Amines</u>	<u>EO/PO Block Copolymers</u>	<u>Miscellaneous</u>
<u>Polypropylene Glycols</u>		

5/5

[<< back](#)

## Fatty Acids

## For Personal Care Products:

Fatty Acids			
Product	CITFA-Adopted Name	Physical Form at 25 degrees C	Effects
Hystrene™ 7022	Behenic Acid (70% Behenic and Arachidic)	Flakes	Cleansing, Emolliency, Emulsification (as salt)
Hystrene 9022	Behenic Acid (90% Behenic and Arachidic)		
Industrene™ 325	Coconut Acid (distilled)	Paste	
Industrene 328	Coconut Acid (stripped)		
Industrene 223	Hydrogenated Coconut Acid		
Hystrene 5012	Hydrogenated Coconut Acid (stripped)	Flakes	
Hystrene 9512	Lauric Acid ( 95% Lauric)		
Hystrene 9014	Myristic Acid (90% Myristic)		
Industrene 106	Oleic Acid (low-titer)	Liquid	
Industrene 206			
Hystrene 9016	Palmitic Acid (90% Palmitic)	Flakes	
Hystrene 9018	Stearic Acid (90% Stearic)		
Hystrene 9718 NF	Stearic Acid (92% Stearic)		
Hystrene 5016 NF	Stearic Acid (triple pressed)		